

Notice of Allowability

Application No.

10/562,459

Examiner

JEAN M. CORRIELUS

Applicant(s)

GROSSFELD ET AL.

Art Unit

2162

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on March 12, 2009.
2. ☒ The allowed claim(s) is/are 1, 3-4, 7-11, 13-14, 17-25, 27, 29 and 30 renumbered as claims 1-22.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some* c) ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|--|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date _____ |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

/Jean M Corrielus/
Primary Examiner, Art Unit 2162

DETAILED ACTION

1. This office action is in response to the amendment filed on March 12, 2009, in which claims 1-25 and 27-30 are presented for examination.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Michael K. Hsu (Reg. No. 46,782) on March 30, 2009.

The application has been amended as follows:

In claim:

1. (Currently Amended) A computer system to process data transactions in a data store including a plurality of databases, the system comprising:

a processor-implemented computer interface module to receive a data transaction request from at least one requesting computer, wherein the data transaction request is an object oriented request;

a processor-implemented data store interface module to interface ~~the system~~ to the plurality of databases, wherein the plurality of databases are horizontally distributed; and

a processor-implemented data access layer to identify a plurality of different databases from the plurality of databases and to split the data transaction request into a plurality of data

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transaction requests to the different databases, the ~~processor-implemented~~ data access layer being operatively in data communication with the ~~processor-implemented~~ computer interface module and the ~~processor-implemented~~ data store interface module and defining an abstraction layer between the processor-implemented computer interface module and the processor-implemented data store interface module,

wherein the data access layer defining an object oriented abstraction layer between the computer interface module and the plurality of databases;

a processor-implemented data dependent routing module to identify a data type from the data transaction request, map the data transaction request to an associated physical host, and generate a query to at least one of the plurality of different databases that is identified based on content of the data in the data transaction request;

communicate at least part of the plurality of data transaction requests to the at least one database of the plurality of different databases identified;

gathering a plurality of results received from the different databases; and

presenting the plurality of results to the at least one requesting computer.

2. (Cancelled)

3. (Currently Amended) The system of claim 1, wherein the processor-implemented data access layer comprises a plurality of logical hosts and a plurality of physical hosts, wherein a-the logical host is derived from the data transaction request and mapped to a physical host that identifies at least one of the plurality of databases.

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4. (Currently Amended) The system of claim 3, wherein the processor-implemented data access layer comprises at least one logical table and at least one physical table, wherein the a logical table being identified from the data transaction request and mapped to the a physical table which identifies a corresponding logical host.

5. (Cancelled)

6. (Cancelled)

7. (Currently Amended) The system of ~~claim 6~~ claim 1, wherein the at least one rule includes at least one attribute that is used identify the physical host.

8. (Currently Amended) The system of ~~claim 5~~ claim 1, wherein the processor-implemented data dependent routing module ~~identifies~~ identifying at least one database for ~~with the user from the data transaction request, and wherein the data transaction request associated with a user is split across the plurality of databases.~~

9. (Currently Amended) The system of ~~claim 5~~ claim 1, wherein ~~the data transaction request is an object oriented request and~~ the processor-implemented data dependent routing module maps the object oriented request to a physical host that identifies an associated database of the plurality of databases.

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10. (Currently Amended) The system of claim 1, ~~which forms part of a network-based commerce facility and the data transaction requests are requests associated with items listed in the network-based commerce facility;~~ wherein the data transaction requests being communicated between any one of a plurality of client machines and the system via the Internet.

11. (Currently Amended) A method of processing data transactions in a data store including a plurality of databases, the method comprising:

using one or more processors to perform ~~at least a portion of one or more of~~ the following acts of:

receiving a data transaction request from at least one requesting computer, wherein the data transaction request is an object oriented request;

using a data access layer that defines an abstraction layer to identify at least one database a plurality of different databases from the plurality of databases, wherein the plurality of databases are horizontally distributed;

wherein the data access layer:

defining an object oriented abstraction layer between the computer interface module and the plurality of databases;

splitting the data transaction request into a plurality of data transaction requests;

identifying a data type from the data transaction request;

mapping the data transaction request to an associated physical host; and

generate a query to at least one of the plurality of different databases that is identified based on content of the data in the data transaction request;

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communicating at least part of the plurality of data transaction requests to at least one database of the plurality of different databases identified;

gathering a plurality of results received from the different databases; and

presenting the plurality of results to the at least one requesting computer.

12. (Canceled)

13. (Previously Amended) The method of claim 11, wherein the data access layer comprises a plurality of logical hosts and a plurality of physical host, the method comprising deriving a logical host from the data transaction request and mapping the logical host to a physical host that identifies at least one of the plurality of different databases.

14. (Currently Amended) The method of claim 13, wherein the processor-implemented data access layer ~~comprises~~ comprising at least one logical table and at least one physical table, wherein the a logical table being identified from the data transaction request and mapped to the a physical table which identifies a corresponding logical host.

15. (Cancelled)

16. (Cancelled)

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17. (Currently Amended) The method of ~~claim 16~~ claim 11, ~~which comprises wherein the~~
processor-implemented data access layer optionally changing the at least one rule in real-time.

18. (Currently Amended) The method of ~~claim 16~~ claim 11, ~~which comprises: wherein~~
the processor-implemented data access layer identifying if the data transaction request has an
associated rule; retrieving the associated rule when the data transaction request has a rule
associated therewith; and mapping the data transaction request to a physical host based on the
associated rule.

19. (Currently Amended) The method of claim 18, ~~in which~~ wherein the processor-
implemented data access layer mapping the data transaction request to a physical host includes:
mapping the data transaction request to a logical host based on the associated rule; and mapping
the logical host to a physical host identifying one of the plurality of databases.

20. (Currently Amended) The method of ~~claim 16~~ claim 11, wherein the at least one rule
includes an attribute that is used identify a physical host.

21. (Currently Amended) The method of claim 11, wherein data associated with a user is
split across the plurality of databases, wherein the plurality of databases ~~the method comprising~~
identifying at least one database associated with the user from the data transaction request.

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22. (Currently Amended) The method of claim 11, wherein the data transaction request is an object-oriented request ~~orientated request~~, wherein the object-oriented ~~the method comprising~~ mapping ~~the object-orientated request~~ to a physical host that identifies an associated database of the plurality of databases.

23. (Currently Amended) The method of claim 11, ~~which comprises~~ wherein the data transaction request determining if at least one of the plurality of different databases identified is down and, if so, mapping the data transaction request to an alternative database of the plurality of different databases.

24. (Original) The method of claim 11, wherein the data transaction request is selected from the group consisting of a create transaction, a read transaction, an update transaction, and a delete transaction and the data access layer is programmable to define in which database of the plurality of databases the transaction is to be performed in.

25. (Currently Amended) The method of claim 11, ~~which includes~~ wherein the data transaction request monitoring the status of the plurality of databases; and using the data access layer to balance a load on the plurality of databases in response to the monitored status.

26. (Cancelled)

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27. (Currently Amended) A computer system to process data transactions in a data store including a plurality of databases, the system comprising:

means for receiving a data transaction request from at least one requesting computer,
wherein the data transaction request is an object oriented request;

means for using a data access layer that defines an abstraction layer to identify a plurality of different databases from the plurality of databases and to split the data transaction request into a plurality of data transaction requests, wherein the plurality of databases are horizontally distributed, and

wherein the data access layer:

defining an object oriented abstraction layer between the means for receiving a data transaction request and the plurality of databases;

identifying a data type from the data transaction request;

mapping the data transaction request to an associated physical host; and

generating a query to at least one of the plurality of different databases that is identified based on content of the data in the data transaction request;

means for communicating at least part of the plurality of data transaction request to the at least one database of the plurality of different databases identified;

means for using a data dependent routing module to

gathering a plurality of results received from the different databases; and

presenting the plurality of results to the at least one requesting computer.

28. (Canceled)

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29. (Currently Amended) The system of claim 27, ~~which comprises~~ wherein the ~~processor-implemented~~ data access layer comprises at least one logical table and at least one physical table, wherein the a logical table being identified from the data transaction request and mapped to the a physical table which identifies a corresponding logical host.

30. (Currently Amended) A machine-readable storage medium ~~which comprises~~ executable instructions ~~that~~, said executable instructions when executed by a machine, causes a processor to perform the operations ~~the machine to~~:

receive a data transaction request from at least one requesting computer, wherein the data transaction request is an object oriented request;

use a data access layer that defines an abstraction layer to identify at least one database from the plurality of databases and to split the data transaction request into a plurality of data transaction requests, wherein the plurality of databases are horizontally distributed, and

wherein the data access layer:

defining an object oriented abstraction layer between the data transaction request and the plurality of databases;

identifying a data type from the data transaction request;

mapping the data transaction request to an associated physical host; and

generating a query to at least one of the plurality of different databases that is identified based on content of the data in the data transaction request;

communicate at least part of the plurality of data transaction requests to the at least one database of the plurality of different databases identified;

gathering a plurality of results received from the different databases; and
presenting the plurality of results to the at least one requesting computer.

Allowable Subject Matter

3. The present application has been thoroughly reviewed. Upon searching a variety of databases, the examiner respectfully submits that claims 1, 3-4, 7-11, 13-14, 17-25, 27, 29 and 30 are allowed in light of the Applicants arguments and in light of the prior art made of record.

Reason For Allowance

4. The following is an examiner's Statement of Reasons for Allowance: The present invention is directed to a method and system to for managing data transaction request in a data processing system by facilitating load balancing, fast fail-over, and/or support future splits for scalability. Multiple databases are provided at the back end. It is to be appreciated that the databases are configured for different applications. For example, some of the databases may be replicas of one another, some may be read only subsets of one another (e.g., on-demand caches), and some are primary databases of record. The data are stored in different tables and/or instances according to the data itself and are used to map requests for objects to specific database objects in specific database instances. The present invention uses an access layer to define an abstraction layer to split a transaction request to different database instances and the results are gathered to present to the users. The closest prior art, (WO 02/103576) is related to a similar system to implement a persistent and dismissible search center frame that could quickly and efficiently peruse through the extensive database to locate the information that an user requested. It is to be

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appreciated that multiple databases are provided at the back end and they are configured for different applications. For example, some of the databases may be replicas of one another, some may be read only subsets of one another some are primary databases of record (see page 12, last paragraph). The databases are configured to keep track of the availability and connectivity information associated with the servers. So, various components in the system can query the database for various information regarding the servers availability and connectivity. (WO 02/103576), on the other hand, does not deal in storing a single database record into a plurality of different tables in different databases nor splitting a transaction request into the plurality of database using an access layer, wherein the access layer defines an abstraction layer to manage the transaction request. However, (WO 02/103576) either singularly or in combination, fails to anticipate or render obvious the recited features “use a data access layer that defines an abstraction layer to identify at least one database from the plurality of databases and to split the data transaction request into a plurality of data transaction requests, wherein the data access layer defining an object oriented abstraction layer between the data transaction request and the plurality of databases; identifying a data type from the data transaction request; mapping the data transaction request to an associated physical host; and generating a query to at least one of the plurality of different databases that is identified based on content of the data in the data transaction request”. These features, in conjunction with all other limitations of the dependents and independent claim renders claims 1, 3-4, 7-11, 13-14, 17-25, 27, 29 and 30 allowed.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue

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fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEAN M. CORRIELUS whose telephone number is (571)272-4032. The examiner can normally be reached on 10 hours shift.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Breene can be reached on (571) 272-4107. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jean M Corrielus/
Primary Examiner, Art Unit 2162

July 1, 2009